IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Tadayoshi ITO
Title:	RADIO CELL STATION APPARATUS, REFERENCE SIGNAL ALLOCATION METHOD AND REFERENCE SIGNAL ALLOCATION PROGRAM
Appl. No.:	10/528,019
International Filing Date: 371(c) Date:	9/18/2003 03/16/05
Examiner:	Diego D. Herrera
Art Unit:	2617
Confirmation Number:	9311

PRE-APPEAL BRIEF REQUEST FOR REVIEW

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Commissioner for Patents
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Sir:

In accordance with the **New Pre-Appeal Brief Conference Program**, announced in the July 12, 2005, Office Gazette, this Pre-appeal Brief Request is being filed together with a Notice of Appeal and is being filed before the filing of an Appeal Brief.

The rejections of record are untenable because none of the cited references, either alone or in combination, teach or suggest a composition comprising (a) search means for searching for a reference signal already used in a neighboring cell station, (b) reference signal allocation means for allocating, when a connection request is received from a terminal device, a reference signal different from the reference signal stored in said storage means, (c) storage means for storing a plurality of reference signals different from each other, and (d) reference signal allocation means for randomly selecting, when a connection request is received from a terminal device, a reference signal from said storage means based on a cell station number

assigned to each cell station and allocating the reference signal to said terminal device, as claimed.

The claims currently under examination, claims 1-15, stand rejected as follows:

1. under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent Application Publication 2002/0039886 ("Doi") in view of U.S. Patent Application Publication 2001/0019952 ("Ishida").

None of these references teaches or a radio station apparatus that includes "search means for searching for a reference signal already used in a neighboring cell station" and "reference signal allocation means for allocating, when a connection request is received from a terminal device, a reference signal different from the reference signal stored in said storage means." (e.g. see claim 1). Analogous features are found in independent claims 6 and 11.

First, the Examiner utilizes Doi to teach "search means for searching for a reference signal already used in a neighboring cell station," referring to "search means (40) for searching for a reference signal already used in a neighboring cell station (paragraph [0058])." (OA, page 3, paragraph 5, lines 6-7). The Examiner also refers to paragraph 0155 and Figure 9 of Doi to teach this feature of the invention as claimed. The Examiner has already admitted that his usage of item 40 is incorrect. In the Response to Arguments section of the OA (page 2), the Examiner states to ignore and disregard the usage of item 40 in all applicable claims. Further, Doi merely teaches obtaining a signal from an antenna, and generating a signal based upon this obtained signal in paragraph 0058. Doi teaches generating a reference signal for forming the antenna directivity based upon a code notified from the radio base station (paragraphs 0056 and 0058). Figure 9 and its corresponding description in Doi depict a schematic drawing of path division multiple access and wireless zones where both the radio base station and mobile base station are performing directivity control. Given the depiction of Figure 9, Doi teaches that, ideally, the same frequency f1 can be used repeatedly, even in adjacent zones. (paragraph 0155). Utilizing the same frequency for communication between base stations is in no way equivalent to "search means for searching for a reference signal already used in a neighboring cell station." In fact, there is no teaching or suggestion in this paragraph, or anywhere in the disclosure of Doi, of searching for a reference signal that is already used in a neighboring cell. Doi merely teaches utilizing the same frequency for

communication. There is no teaching or disclosure in Doi of search means for searching for a reference signal already used in a neighboring cell station.

Ishida also fails to teach this feature. Ishida teaches a base station obtaining such signals from mobile stations. (paragraph 0019) There is no teaching or disclosure in Ishida of search means for searching for a reference signal already used in a neighboring cell station.

Second, the Examiner utilizes Ishida to teach "reference signal allocation means for allocating, when a connection request is received from a terminal device, a reference signal different from the reference signal stored in said storage means," specifically referring to paragraphs 0086 and 0087 of Ishida. The cited paragraphs of Ishida relate to the reference signal UW and teach "that UW information is not generated and stored into a UW storing unit 90 until the wireless base station receives a UW from a mobile station." (paragraph 0086) The wireless base station sends the UW to the mobile station when requesting a channel assignment to the base station. (paragraph 0087). This is in no way equivalent to replacing a reference signal that was stored in storage means with a different reference signal when a connection request was received from a terminal device. Ishida explicitly teaches that no UWs are stored until a request is received from the mobile station. Thus, Ishida fails to teach or disclose "reference signal allocation means for allocating, when a connection request is received from a terminal device, a reference signal different from the reference signal stored in said storage means."

Further, none of these references teaches or a radio station apparatus that includes "storage means for storing a plurality of reference signals different from each other" and "reference signal allocation means for randomly selecting, when a connection request is received from a terminal device, a reference signal from said storage means based on a cell station number assigned to each cell station and allocating the reference signal to said terminal device." (e.g. see claim 4). Analogous features are found in independent claims 9 and 14.

First, the Examiner utilizes Doi to teach "storage means for storing a plurality of reference signals different from each other," specifically referring to "storage means (70) for storing a plurality of reference numbers different from each other (paragraph [0056], [0058])." (OA, page 4, paragraph 3, lines 6-7). The reference numeral 70 in Doi is used to

refer to the base band unit. There is no teaching or disclosure in Doi of storage means identified with the reference numeral 70. The cited paragraphs discuss a radio communication method used by a radio information terminal, in which a code used for synchronization with symbols is stored and a reference signal is generated (paragraphs 0054-0058 of Doi). There was no teaching or suggestion, in these cited paragraphs or anywhere in the disclosure of Doi, of storing multiple codes or multiple reference signals in a single storage means. Thus, Doi fails to teach or disclose "storage means for storing a plurality of reference signals different from each other."

Ishida also fails to teach storage means for storing a plurality of reference signals different from each other. Ishida teaches a base station obtaining such signals from mobile stations. (paragraph 0019) There is no teaching or disclosure in Ishida of "storage means for storing a plurality of reference signals different from each other."

Second, the Examiner utilizes Ishida to teach "reference signal allocation means for randomly selecting, when a connection request is received from a terminal device, a reference signal from said storage means based on a cell station number assigned to each cell station and allocating the reference signal to said terminal device," specifically referring to paragraphs 0086 and 0087 of Ishida. As mentioned above, these cited paragraphs of Ishida relate to the reference signal UW and teach "that UW information is not generated and stored into a UW storing unit 90 until the wireless base station receives a UW from a mobile station." (paragraph 0086) The wireless base station sends the UW to the mobile station when requesting a channel assignment to the base station. (paragraph 0087). This is in no way equivalent to randomly selecting a reference signal from storage means based on a cell station number assigned to the cell station and allocating the reference signal to the terminal device, when a connection request was received from a terminal device. Ishida teaches that the mobile station is configured to "determine an appropriate value to be used as a UW" and send that to the wireless base station (paragraph 0087), but there is no teaching or disclosure in Ishida that the determination is done by randomly selecting a reference signal from storage means based on a cell station number assigned to the cell station, as required by the invention as claimed. Thus, Ishida fails to teach or disclose "reference signal allocation means for randomly selecting, when a connection request is received from a terminal device, a reference

signal from said storage means based on a cell station number assigned to each cell station and allocating the reference signal to said terminal device."

Applicants note that the failure of Doi and Ishida to teach the features of search means and reference signal allocation means of the invention as claimed is derived from the fact that Doi and Ishida are both trying to solve different problems than the instant invention. Specifically, both Doi and Ishida aim to prevent mutual interferences between a plurality of mobile terminal devices that are multi-connected to a radio base station in the same cell. Doi and Ishida merely disclose the usage of different unique words that are designated for respective terminals when a request for connection is given, such that the unique word designated for one specific terminal is not given in consideration of terminals in other adjacent cells. (Figure 4, paragraph 0120 of Doi; Abstract of Ishida), Thus, although Doi and Ishida are able to avoid interferences with other terminals in the same cell, neither Doi nor Ishida mentions or addresses the problem that interferences with terminals in other cells could still occur.

Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Applicants reserve the right to supplement these remarks and, should the application not be allowed, submit additional arguments in an Appeal Brief or at some later stage of prosecution.

Respectfully submitted,

Date 5/7/08

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